### **PCT**

# 世界知的所有權機関国際事務局

## 特許協力条約に基づいて公開された国際出願



(51) 国際特許分類6

C07D 487/04 // A61K 31/505

A1 (11) 国際公開番号

WO98/08848

(43) 国際公開日

1998年3月5日(05.03.98)

(21) 国際出願番号

PCT/JP97/03023

JP

(22) 国際出願日

1997年8月29日(29.08.97)

(30) 優先権データ

特願平8/230807

1996年8月30日(30.08.96)

(71) 出願人(米国を除くすべての指定国について)

協和設酵工業株式会社

(KYOWA HAKKO KOGYO CO., LTD.)[JP/JP]

〒100 東京都千代田区大手町一丁目6番1号 Tokyo, (JP)

(72) 発明者;および

(75) 発明者/出顧人 (米国についてのみ)

小野田靖夫(ONODA, Yasuo)[JP/JP]

〒411 静岡県駿東郡長泉町下土狩1334-6 Shizuoka, (JP)

野本裕二(NOMOTO, Yuji)[JP/JP]

〒411 静岡県駿東郡長泉町中土狩557 Shizuoka, (JP)

大野哲司(OHNO, Tetsuji)[JP/JP]

〒411 静岡県駿東郡長泉町下土狩1188 Shizuoka, (JP)

山田耕口(YAMADA, Koji)[JP/JP]

〒229 神奈川県相模原市大野台4-22-8 Kanagawa, (JP)

市村通朗(ICHIMURA, Michio)[JP/JP]

〒411 静岡県三島市佐野見晴台1-31-14 Shizuoka, (JP)

(81) 指定国 AU, BG, BR, CA, CN, CZ, HU, JP, KR, MX, NO, NZ, PL, RO, SG, SI, SK, UA, US, VN, ユーラシア特許 (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), 欧州特許 (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

添付公開書類

国際調査報告書

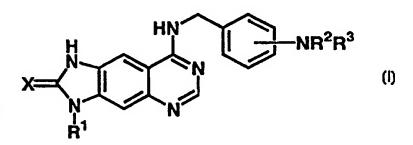
(54) Title: IMIDAZOQUINAZOLINE DERIVATIVES

(54)発明の名称 イミダゾキナゾリン誘導体

### (57) Abstract

Imidazoquinazoline derivatives represented by general formula (I) or pharmacologically acceptable salts thereof, which have potent and selective inhibitory effects on cyclic guanosine-3',5'-monophosphate

(cGMP)-specific phosphodiesterase and are useful in, for example, treating or relieving cardiovascular diseases such as thrombosis, angina pectoris, hypertension, cardiac insufficiency and arteriosclerosis, asthma, etc. and treating sexual impotence. In said formula,



R¹ represents hydrogen, optionally substituted lower alkyl, optionally substituted cycloalkyl, optionally substituted bicycloalkyl, optionally substituted tricycloalkyl, etc.; R² represents hydrogen, optionally substituted lower alkyl, optionally substituted cycloalkyl, optionally substituted bicycloalkyl, optionally substituted lower alkenyl, optionally substituted aralkyl, etc.; R³ represents hydrogen, optionally substituted lower alkyl, optionally substituted bicycloalkyl, optionally substituted bicycloalkyl, optionally substituted tricycloalkyl, optionally substituted tricycloalkyl, optionally substituted lower alkenyl, optionally substituted aralkyl, etc., or R² and R³ may form together with N an optionally substituted heterocyclic group; and X represents O or S.